DESCRIPTION

Work shall consist of installation of new gate valves with valve boxes; or adjusting elevation of water main valve boxes or hydrant guard valve boxes to conform to the new grades; or removing existing valve boxes, as shown on the plans and as directed by Resident Engineer.

REFERENCES

ANSI/AWWA C104 - Cement Mortar Lining for Ductile Iron Pipe and Fittings for Water.

ANSI/AWWA C110 - Ductile Iron and Gray Iron Fittings, 3-inch Through 48-inch for Water and Other Liquids.

ANSI/AWWA C111 - Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings.

ANSI/AWWA C500 - Metal Seated Gate Valves for Water Supply Service.

ANSI/AWWA C504 - Rubber Seated Butterfly Valves.

ANSI/AWWA C509 - Resilient Seated Gate Valves, 3-inch Through 24-inch NPS, for Water and Sewage Systems.

ANSI/AWWA C550 - Standard for Protective Epoxy Interior Coatings for Valves and Hydrants.

MATERIALS

GENERAL

For valve box adjustments, replacement parts shall be made by the original manufacturer of the valve box or an approved equal.

Gate Valves (Resilient-Seated, 76 mm through 610 mm):

Standards: ANSI/AWWA C509, including factory production testing.

MATERIALS

Non-rising stem.

Counterclockwise direction of opening.

Mechanical joint ends.

Double O-ring stem seal.

51 mm square operating nut.

Flax stuffing box packing conforming to Federal Specification HH-P-106d.

304 stainless steel body and bonnet bolts.

Manufacturers:

1. Clow.
2. Mueller.
3. U.S. Pipe.
4. Kennedy

EXTENSION STEMS

MATERIALS

Stem material: (Material to be determined by MCWA.)

A. Metallic: Steel extension stem shaft constructed from 1" solid steel, must have a centering ring on upper end, have a 2" heavy, square socket on one end and a 2" heavy square nut on the other end, all coated with a rust-inhibitive coating. Socket end must be drilled and tapped on opposite sides with ¼" set screws installed. Drill recesses in the valve operating nut on opposite sides to accept the two ¼" set screws. Securely fasten the set screws to the valve operating nut.

B. Non-metallic: Fiberglass, 51 mm O.D. square tubing.

End unit material: PVC, with centering device on upper end unit.

Adhesive: Hard-drying, clear silicone.

Manufacturers

1. Pipeline Products: FPU 210, FPT 200 and FPL 220.
2. Or approved equal.

VALVE BOXES

MATERIALS

Boxes shall be 133 mm diameter.

All sections shall be interchangeable with old Buffalo Foundry boxes, Style #5001.

Boxes shall be coated with a petroleum-asphaltic material.

All box tops shall have the word "Water" casted into them.

Manufacturers:

1. Bibby Laperle

    a. Regular Valve Box: 3 Piece Screw Type, B-5001.
    b. Extensions: Screw Type, B-5050.
    c. Fixed Risers: V829, V830, V831, V832 & V833
    d. Covers: "Water", B-5160.

2. Bingham & Taylor

    a. Base: #6
    b. Mid Section: Series 64 and 62.
    c. Top Section: Series 54, 55 or 56.
    d. Covers: "Water".

BEDDING, BACKFILL, AND SURFACE RESTORATION

Bedding, backfill, and surface restoration materials, and methods of placement shall conform to the requirements of the appropriate Sections of the NYSDOT Standard Specifications, latest revision.

CONSTRUCTION DETAILS

GENERAL

Take appropriate measures to prevent dirt, debris, and surface water from entering the water main.

Plug open pipe ends with watertight plugs whenever work is discontinued for any length of time, or when laying conditions may allow foreign matter to enter the pipe.

Before installation, swab interior of valve, open pipe ends, all new pipe, and sleeves, with a 5 percent hypochlorite solution.

INSTALLATION (GATE VALVES)

The gate valve shall be inspected, cleaned, lubricated, and tested before installation to insure that it is in proper working order.

Install valve on cement block support so that valve is supported independently of pipeline.

Install valve in accordance with manufacturer's recommendations. Install gate valve with

its stem in a vertical position. All joints shall be made watertight.

Place and compact Type 1 Select Fill around valve up to base of valve box. Pay special attention to the backfill under the gate valve, to obtain a well compacted bed for the gate valve.

Install valve stem extensions when required.

INSTALLATION (VALVE EXTENSION STEMS)

Install extension stems on valves when distance between valve operating nut and finished grade is greater than 1.7 m.

Maintain a distance between 1.7 m and 0.9 m from top of extension stem and finished grade.

Field cut fiberglass tubing to required length.

Apply silicone to inner groove of end units and install end units on tubing.

Apply silicone to lower end unit and install on valve nut.

INSTALLATION (VALVE BOXES)

Center and plumb valve box over operating nut. Carefully set valve box over valve stem. Adjust top section for elevation, and center base over operating nut.

Carefully set and brace all valve boxes to insure that they remain in a vertical position centered on the valve stem during and after backfilling. Maintain proper alignment and height of all new boxes, until completion of the project. Set box cover flush with finished surface grade.

Backfill the trench in a manner to avoid damage to the valve and valve box.

ADJUST EXISTING VALVE BOX

Adjust top of valve box to new grade by one of the following methods. The Contractor shall select the method that is best suited for each individual valve box adjustment:

1. A valve box extension adapter may be added to the top of existing valve box.
2. Top section of existing valve box may be adjusted up or down as necessary within its adjustable limits.
3. Any other method approved by the Resident Engineer.

When valve boxes are placed in unpaved areas, cast a concrete cap 460 mm square by 210 mm deep around the valve box with top surface shaped to shed water. Concrete cap may

be deleted if directed by the Resident Engineer.

Existing valve boxes that are damaged, broken or shifted from true alignment by Contractor's operations, must be repaired, replaced or re-aligned by the Contractor at no cost to the Monroe County Department of Transportation or Monroe County Water Authority.

REMOVE EXISTING VALVE BOX

All work shall be coordinated with Monroe County Water Authority.

Abandon all valves in closed position.

Remove entire valve box only after water main the valve operated has been abandoned. Excavate as necessary to remove entire curb box and rod or valve box, and properly dispose of.

Backfill abandonment excavation and restore disturbed area.

METHOD OF MEASUREMENT

NEW GATE VALVE AND VALVE BOX

Quantity to be measured for payment shall be the number of gate valves with valve boxes installed.

ADJUST EXISTING VALVE BOX

Payment will be made for each water main valve box adjusted as directed by the Resident Engineer. No payment will be made under this item for any valve box adjusted under another item.

REMOVE EXISTING VALVE BOX

Quantity to be measured for payment shall be the number of valve boxes removed.

BASIS OF PAYMENT

NEW GATE VALVE AND VALVE BOX

Unit price bid shall include the cost of: furnishing and installing gate valve with complete valve box; maintaining proper alignment and height of the valve boxes until project completion; pavement saw cutting; and furnishing all labor, material and equipment necessary to complete the work.

Excavation, rock excavation, furnishing and placing of bedding and select granular backfill, and surface restoration will be paid for under separate bid items.

ADJUST EXISTING VALVE BOX

Unit price bid shall include the cost of furnishing all labor, equipment and material including replacement parts, concrete, excavation and backfill necessary to complete the work.

REMOVE EXISTING VALVE BOX

Unit price bid shall include the cost of: excavation, removal of valve box, and backfill, and furnishing all labor, material and equipment necessary to complete the work in acceptance with the specification and as indicated on the plans.

Payment will be made under:

Item No.	Item	Pay Unit
660.0706 M	152 mm Gate Valve with Valve Box	EA
660.0708 M	203 mm Gate Valve with Valve Box	EA
660.0712 M	305 mm Gate Valve with Valve Box	EA
660.0715 M	Adjust Existing Valve Box	EA
660.0718 M	Remove Existing Valve Box	EA